

## Letter from Alexander Graham Bell to Mabel Hubbard Bell, April 4, 1909, with transcript

ALEXANDER GRAHAM BELL TO MABEL (Hubbard) BELL Houseboat. Sunday, April 4, 1909. My darling:

Have been hard at work on the last Bulletin since I returned. As it is the final bulletin and will not contain experimental work or outlook material but is intended to be the wind-up number of the A.E.A., I won't try to have it come out tomorrow — indeed it will probably be a week before it comes out. It will be accompanied by a Souvenir volume of photographs and blue-print working diagrams of Cygnet I and the five completed aerodromes.

The Canadian Club of Ottawa had a stenographer present when I addressed them and I find that the Ottawa Citizen of March 29th, has reproduced the address almost in extenso from the stenographer's notes. I enclose a copy.

Douglas came down to the houseboat today to let me know that he received last night a communication from St. Petersburg asking whether he could undertake to build aerodromes for the Russian Government and requesting a cable reply yes or no. We do not know anything about the writer or whether he is entitled to represent the Government, but he gives references to people in the U. S. from whom Douglas can find out who he is. Of course don't say anything about this outside at present. I have recommended Douglas to write to Mr. Fielding, the Canadian Finance Minister, who knows him personally and all his family, to ascertain whether any of the officials in Ottawa know the man. It will do no harm to let him know — and through him the Canadian Cabinet, 2 and the Representative of Great Britain — that inquiries have been received from Russia. Have also recommended him to reply by letter instead of cable that he is building aerodromes

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here; and, if they are not taken up by the Canadian or British Governments he would be glad to offer them to the Russian Government.

I have received from the World's Work people a cheque for \$50.00 for my article "When does Profit become Usury" and I am sending it to Daidums as a nest-egg for little Barbara.

How did they come to give such a barbar-ous name to the little one! I suppose she has been called Barbara after some one in David's family. It does not sound like a name that Daidums would choose unless from family association. "Jemima", that Elsie was threatened with, is a beauty compared to it. I hope she won't be a little barbarian as the name implies but turn out a sweet little girl like her mother. "The rose by any other name would smell as sweet" and our little Barbara will be just as dear to us all as though she had the most refined and civilized name possible to give her. Remind Daisy that we had a bet about the sex of her baby and that I have won. I will claim my reward when I come down.

I had thought of leaving almost immediately just as soon as the Bulletin is off my hands, but I must confess I am tired of travelling, and in spite of my anxiety to see you all — and the baby — I dread another long journey just now. Your telegram telling me not to hurry, came last night and unless some reason exists for an immediate departure, I will put it off to the latter part of the month. I am to lecture upon Aviation in Philadelphia upon the 3 seventh of May. I can prepare the lecture better here than in Washington as my aeronautical books are all here, and unless something turns up to make me change my mind I will aim to be in Washington at the end of April.

Mr. Davidson has been with me here all the afternoon going over our sheep returns and deciding what sheep to keep — although the lambs are not all in yet. We expect about half — a dozen in May but we must punch the ears of the lambs we propose to keep as soon as possible. Up to March 30th, we have had 27 lambs and the majority of them are MALES !!! So our feeding experiment has not turned out such a success after all.

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(1) In our first experiment in 1900 we gave the sheep extra feed with generous hand before they were mated , and stopped this extra supply immediately after mating. This was followed by a large preponderance of female births.

(2) In the second experiment in 1901 we pursued the same plan but continued the extra nourishment for one fortnight after mating — This also was followed by a large proportion of female lambs.

(3) In 1907 we pursued the same plan of generous feeding before mating and for one fortnight afterwards feeding the ewes individually instead of collectively. Again, for the third time, we obtained a large majority of females.

(4) Last year (1908), we did not feed up before mating , simply giving the sheep a little grain and etc., to accustom them to come when called, and reserved our generous extra supply until 4 after mating had been accomplished — carrying it on all winter. This spring we have 27 March-born lambs. 14 of them are males and 13 females. (about 6 more to come)

So far then we have no proof that the production of females has been favored by our feeding experiment and we are beginning to suspect that the feeding before mating, which we have neglected, had a greater influence on the result than the feeding after mating. The results so far are consistent with the hypothesis that sex is determined at conception rather than afterwards. That the condition of nutrition of the mother at or about the time of conception has something to do with determining the sex of the offspring, seems to be indicated by the fact of a marked increase in the proportion of female lambs following the feeding experiments of 1900, 1901 and 1907 and at these three periods alone, in 20 years of breeding. I therefore think that the failure of last year's experiment does not involve a failure in the principle, but only in its mode of application, feed before mating rather than after.

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In spite of the introduction of Dorset blood in a wholesale manner, and the use of alien rams and ewes not of our own breeding the six-nippled tendency in the flock seems to be on the increase. I am using freely a six-nippled ram of alien blood (Though descended on one side from our flock) with our ewes and using our highly inbred rams on alien ewes—aiming at “broad-breeding” rather than in-breeding. We are 5 paying high prices for six-nippled rams or ewes from outside flocks, and are loaning our rams to farmers who have good stock. We have purchased three six-nippled lambs from these farmers at \$10.00 a piece and have offered fifteen for seven-nippled sheep, and twenty dollars for eight-nippled. As a result quite a number of farmers have applied for the use of our rams. Last year we did not have enough highly bred rams to meet the demand. We have our ewes mated in October to favor the production of twins, but the farmers prefer December. There is no difficulty therefore in our loaning our best rams after our mating season is over. If I remember rightly we supplied five farmers with rams last year — but the lambs will not be born until May. This loaning plan is working out so well that I propose this year to present one half of my ewes to farmers who will use our rams. This will enable me to get rid of my four-nippled and five-nippled ewes (excepting twins) and yet practically keep them, for they will not be killed and will be mated with our rams. We can purchase any of the lambs we desire at fancy prices and yet be put to much less expense than if we wintered the ewes ourselves. In this way it will not be necessary for us to keep a large flock on Beinn Bhreagh, and it will pay better to loan rams to farmers and buy the six-nippled offspring at fancy prices than to raise them ourselves. I propose to buy all the six-nippled sheep that present themselves, but to sell no sheep having six-nippled or more. In this way the six-nippled stock will be concentrated here. If we wish to get rid of any we can kill instead of sell.

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The four-nippled and 5-nippled ewes (excepting twins) we can present to farmers as a sort of bonus to induce them to borrow our six-nippled rams for our four-nippled and five-nippled ewes will be more likely to produce the six-nippled offspring for which we will pay

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large prices than the ordinary sheep of the farmer. By only dealing with farmers who have good and improved stock we gain the point that the alien blood of the sheep we buy will come from good breeds of sheep and thus improve our own flock. The lambs of 1908 and 1909, are away ahead of any lambs we have had before, in weight and in all those qualities that are usually prized in sheep, and at the same time the six-nippled tendency is increasing in the flock. The twin-bearing tendency too — and we are getting twins from younger sheep than before. It is usually old sheep that have twins, especially ewes from 4 to 6 years old. We have no old sheep in the flock — the oldest (a single case) being only 5 years old. In spite of this fact 44 per cent of the March-born lambs this year are twins — 12 twins out of 27 lambs. The six mothers of these twins are aged as follows:

1 — one year old when twins were born.

2 — two years old “ “ “ “

1 — three years old “ “ “ “

2 — four years old “ “ “ “

Total 6 ewes.

I think this is a pretty good showing for young sheep. This is the second time we have had twins from a lamb only one year old when her lambs were born and it is obvious that we are getting twins from younger ewes than ever before. The offspring 7 of very young ewes seem to be in every way equal to the lambs of older sheep. In past years this was not the case — a large proportion dying young from weakness at birth or from defective conditions. In these cases the immature ewes had been mated with immature males. Since we have adopted the plan of using only mature rams with immature females no ill effects have been noticed. This saves a year in the selection a result of importance to a man of my years — shortening the time for the expected results of selection to appear. If

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I must wait two years (instead of one) to see the results of an experiment I must make up my mind to rival Methuselah to see the end.

Your loving, Alec.